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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,687	08/28/2003	Hiromi Matsushige	500.43057X00	6768

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EXAMINER

PORTKA, GARY J

ART UNIT

PAPER NUMBER

2188

DATE MAILED: 11/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/649,687

Applicant(s)

MATSUSHIGE ET AL.

Examiner

Gary J. Portka

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
- Paper No(s)/Mail Date 8/28/03, 8/17/04, 12/30/04, 6/14/05, 7/28/05, 9/6/05
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-6, 8-10, and 13 have been amended. Claims 1-13 are pending.

Claim Objections

2. Claims 3 are objected to because of the following informalities: The claims recite dividing a frequency of a clock signal at a ratio, then recite "said clock signal having said divided frequency". However, "said clock signal" should refer to the original clock signal, and thus the clock having the divided frequency is a different clock signal.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites that at least two disk drives "input data to and output data from said disk control portion at different communication speeds". It is unclear whether this limitation means that 1) the input speed is different from the output speed for each of at least two drives, or 2) the input and output speed of one drive is different than that of the other. Claims 2-13 incorporate this limitation by dependency.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Walsh et al., US 5,430,855 (hereinafter "Walsh").

7. As to claim 1, Walsh discloses a storage unit (see Fig. 1) comprising channel control portion (101) receiving input/output request, cache (113), disk control portion (120, 121) performing processing in accordance with the request, plurality of disk drives (122-125), wherein at least two drive input data to and output data from the disk control portion at different communication speeds (see Abstract, col. 1 lines 54 to col. 2 line 22, col. 4 lines 9-16, col. 5 line 61 to col. 6 line 7, col. 7 lines 4-8, and col. 9 line 64 to col. 10 line 3).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 2-4, 8-10, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walsh, Pignolet et al., US 5,898,828 (hereinafter "Pignolet"), and Yoshida et al., EP 1104113 A3 (hereinafter "Yoshida"), or alternatively over Walsh, Pignolet, and Hogeboom, EP 0866559 A1.

10. As to claims 3 and 10, Yoshida discloses a generation portion (Fig. 2) generating a clock (CLOCK SIGNAL OUTPUT) using a pulse signal (DATA SIGNAL), identification

portion identifying the frequency of the pulse (4), frequency division portion dividing the frequency of the clock at a ratio corresponding to the pulse (16), and synchronization portion synchronizing the pulse with the divided clock (the remainder of 1, which is a phase-locked loop). See also Abstract, paras. 0015-0019, and 0026.

11. As to claims 3 and 10, Hogeboom discloses a generation portion (Figs. 1 and 2) generating a clock (Recovered Clock) using a pulse signal (126), identification portion identifying the frequency of the pulse (128), frequency division portion dividing the frequency of the clock at a ratio corresponding to the pulse (230), and synchronization portion synchronizing the pulse with the divided clock (the remainder of Fig. 1, which is a phase-locked loop). See also Abstract, col. 3 lines 18-46, col. 4 lines 26-33, and col. 4 lines 49 to col. 5 line 15.

12. Neither Yoshida nor Hogeboom disclose the circuit used in a disk storage unit. Pignolet discloses a storage unit (see Fig. 5) comprising channel control portion (56, 57), cache (55), disk control portion (58, 59), and plurality of disk drives (at 52). Pignolet also discloses a PLL like those in Yoshida and Hogeboom, in Fig. 9, also at col. 8 lines 10-46, where it is taught that this circuit allows the quick powering up of the disk drive transceiver circuits when only the storage controller needs to communication therewith, thus motivating an artisan to use the PLLs of Yoshida or Hogeboom in this circuit. Alternatively, an artisan would have been motivated to implement the circuit of Pignolet as taught by Yoshida, who taught a PLL circuit that can handle FEC to avoid transmission deterioration (see Yoshida Background of the Invention). Also, an artisan would have been motivated to implement the circuit of Pignolet as taught by Hogeboom,

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who taught a PLL circuit that can lock with a non-periodic data input signal (see col. 1 line 23 to col. 2 line 18). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Yoshida or Hogeboom with that of Pignolet, because each taught respective advantages (Yoshida or Hogeboom) of specific PLL circuits or a beneficiary use (Pignolet) thereof.

13. Neither Pignolet, Yoshida, or Hogeboom disclose the disk drives communicate at different speed. However, Walsh discloses this as discussed above with regard to claim 1, with the clear advantage of allowing the use of such different speed disk drives in a system. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to include disk drives in the combination of Pignolet with Yoshida or Hogeboom described above, because it would allow the use of different speed drives in a system.

14. As to claims 8 and 13, clearly the satisfaction of predetermined communication specifications is met by the circuits of Yoshida and Hogeboom, whose circuits would not function correctly if certain communication specifications were not met.

15. As to claims 2, 4, 6, and 9, the limitation of FC standards is taught by Pignolet (see col. 1 lines 35-40, and col. 2 lines 48-54). It would have been obvious to an artisan to use these standards in a system such as described above in the prior art combination, because this would provide compatibility with systems using this standard.

Conclusion

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary J. Portka whose telephone number is (571) 272-4211. The examiner can normally be reached on M-F 9:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on (571) 272-4210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gary J Portka
Primary Examiner
Art Unit 2188

October 28, 2005



**GARY PORTKA
PRIMARY EXAMINER**